

Tillamook County (OR) Coastal Futures Project

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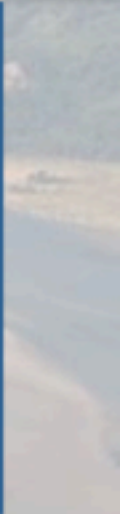
Philip Mote

Climate Impacts Research Consortium

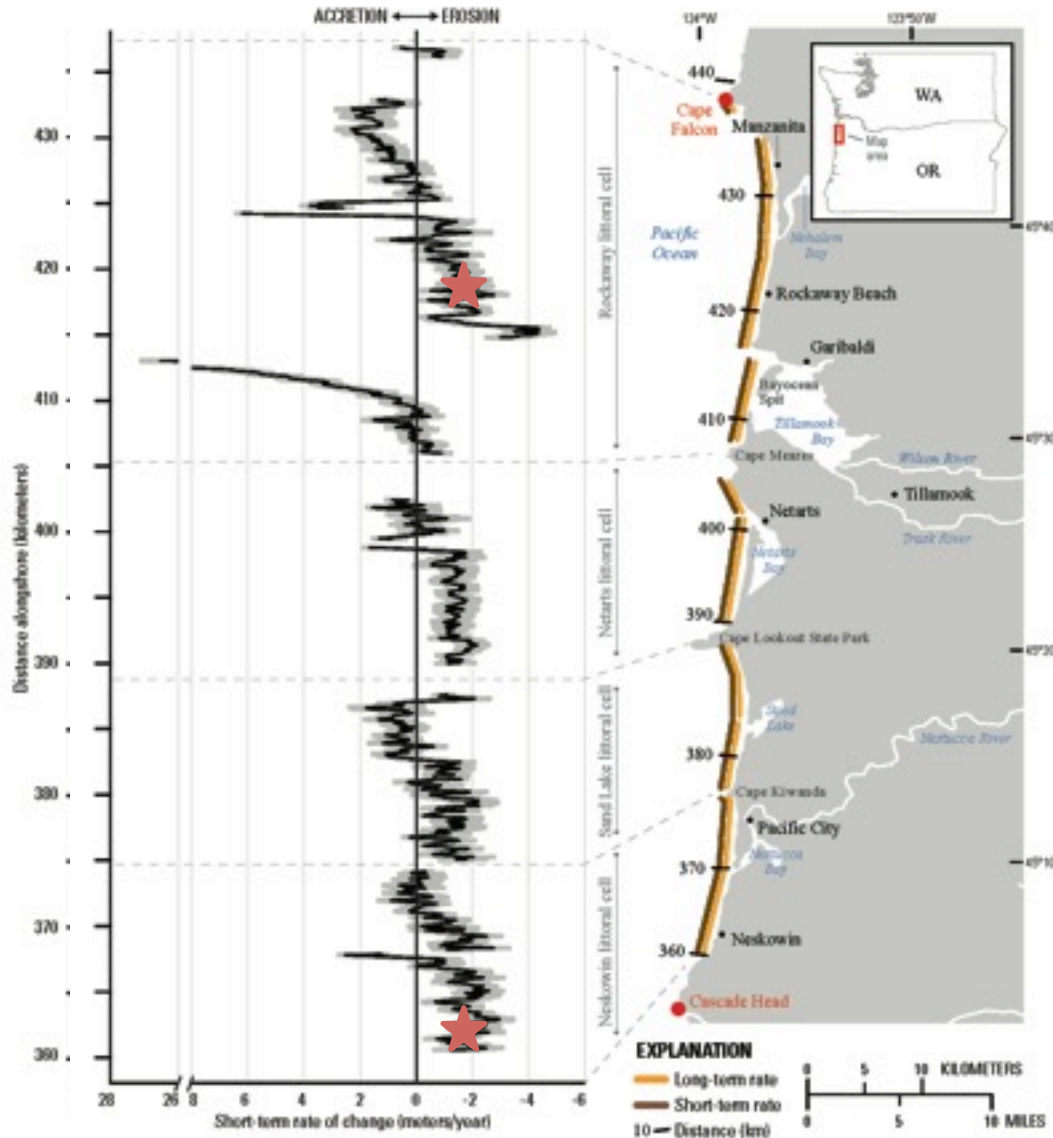
Oregon State University



Tillamook County, OR Coastal Problems



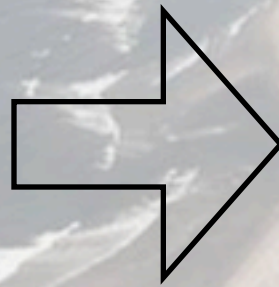
Tillamook County, OR Coastal Problems



Research Objective:

Develop the information and tools necessary to enable the KTAN to envision future scenarios, assess impacts and vulnerability, and initiate adaptation strategies.

Landscape data,
policy options,
inundation data &
model,
erosion,
population growth,
economic data



Envision model

Plug-in models

total water level, land
use and economic
change, ...

Scenario Planning Process

June 2013

Project Kickoff Meeting

October 2013

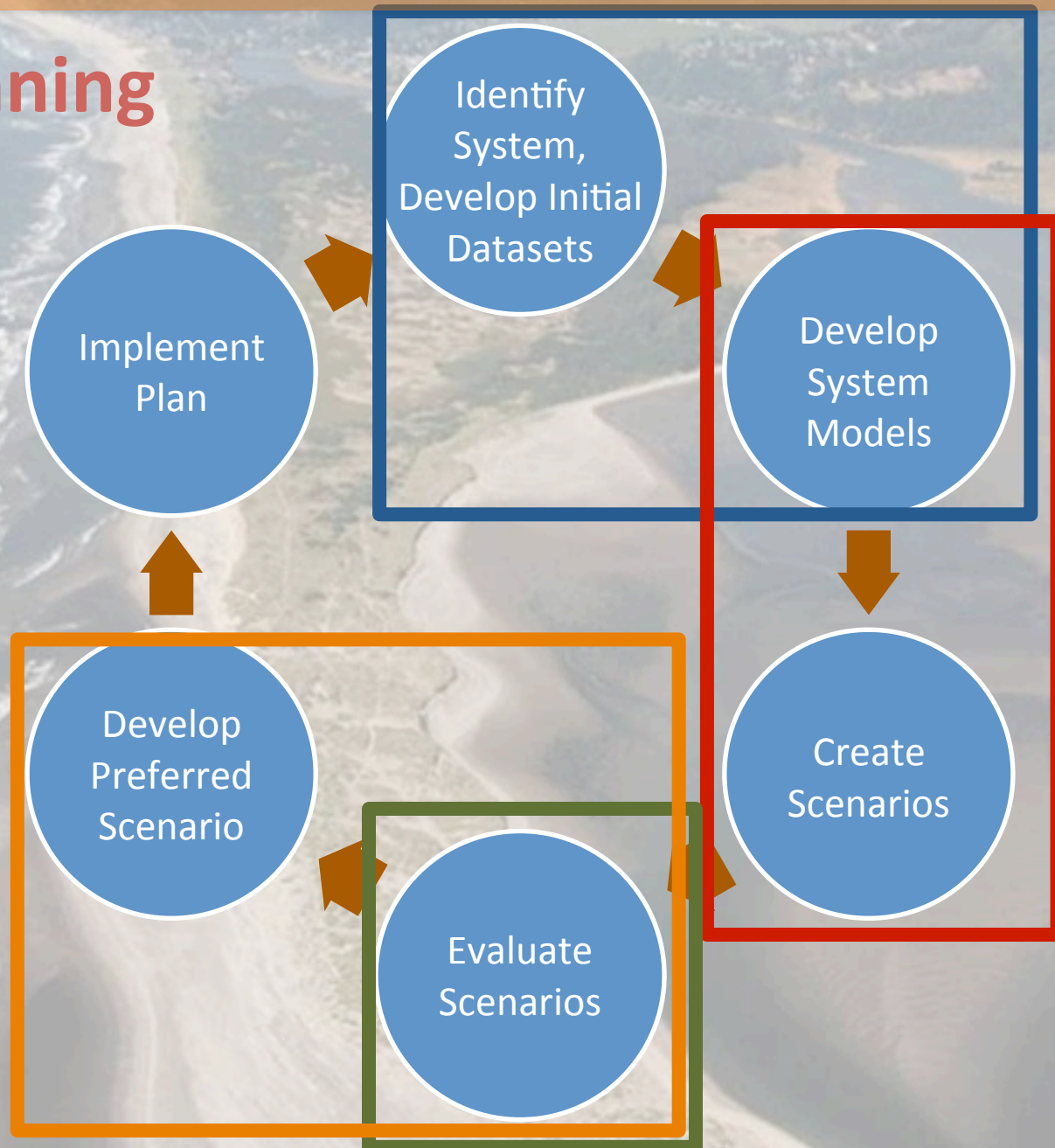
**Scenario Development
Meeting**

June 2014

**Scenario Review & Initial
Results Meeting**

December 2014

**Policy Choices &
Consequences Workshop**



Policy Scenario Narratives



Scenario 1: Status Quo

In a status quo scenario, current laws, goals, and trends are continued into the future for comparison with other scenarios.

Policies Applied

- Determine urban growth boundaries (UGB) in accordance with present-day UGB policy.
- Maintain current backshore protection structures (BPS) and allow more BPS to be built on eligible lots.

Policy Scenario Narratives



Scenario 2: Hold the Line

Policies *resist* environmental change in order to preserve existing infrastructure and human activities (e.g. beach access).

Policies Applied

- Allow more BPS to be built on eligible lots.
- Add beach nourishment where beach access in front of BPS has been lost
- Construct homes above a predetermined threshold elevation and in the safest site of each respective lot.

Policy Scenario Narratives

Scenario 3: ReAlign



Policies that *change* human activities to suit the changing environment (e.g. relocation of infrastructure and/or people, changing land use or livelihoods).

Policies Applied

- Prohibit construction of BPS on additional properties, even if eligible.
- Implement coastal hazard zones and restrict further development within the zones.
- Inventory lots located outside of the coastal hazard areas and re-zone to permit future development.
- Prohibit repetitive repairs of significantly impacted buildings and remove structures from the shoreline after they reach the predetermined repair limit.

Policy Scenario Narratives

Scenario 4: Laissez-Faire



Current policies (state and county) are *relaxed* such that existing homes, infrastructure and new development all trump the protection of coastal resources, public rights, recreational use, beach access, scenic views.

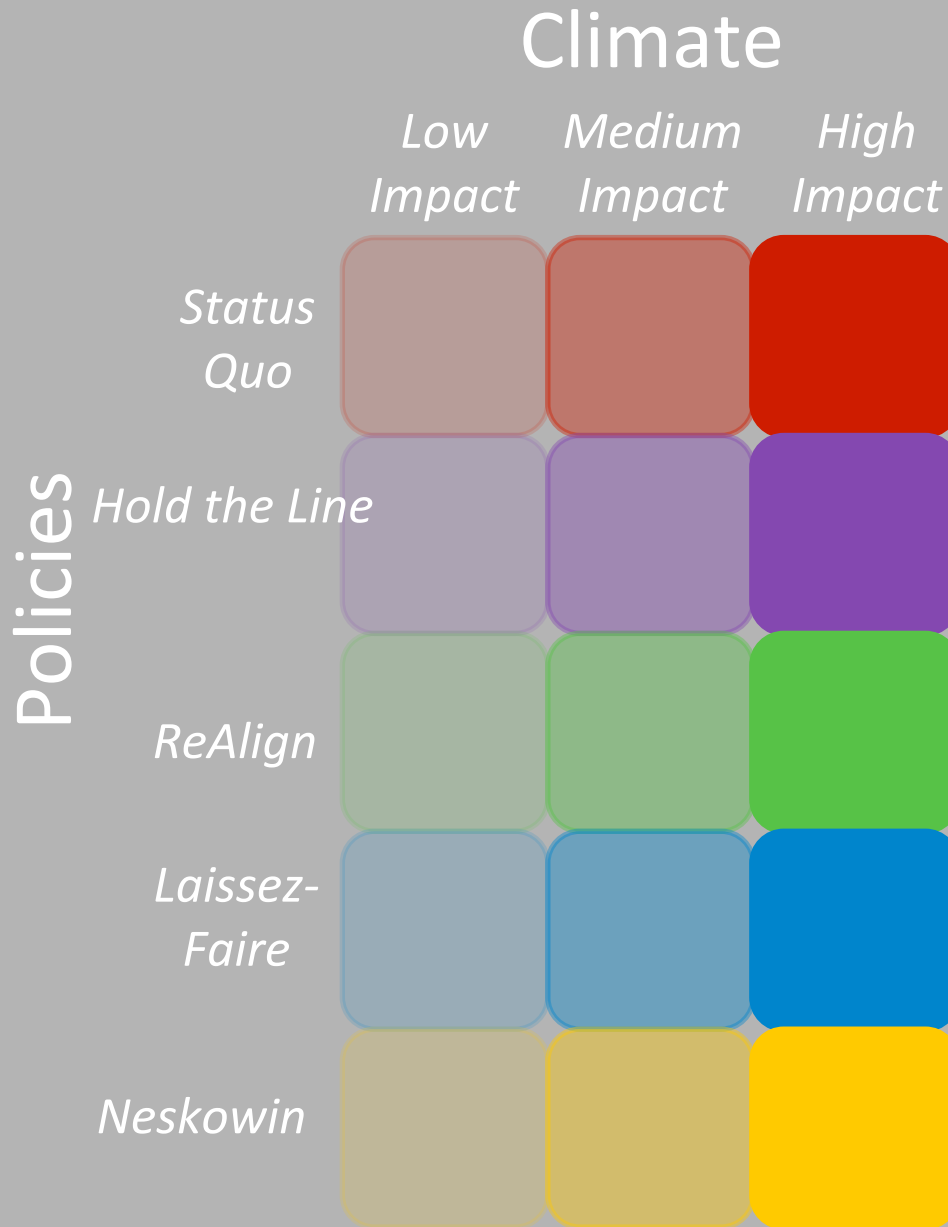
Policies Applied

- Permit development outside the UGB, allowing towns to grow wherever residential land is available.
- Eliminate provisions of state law that limit BPS eligibility, and allow all citizens to construct and maintain BPS as they see fit.

Climate Impact Scenario Narratives

Low, Medium, High

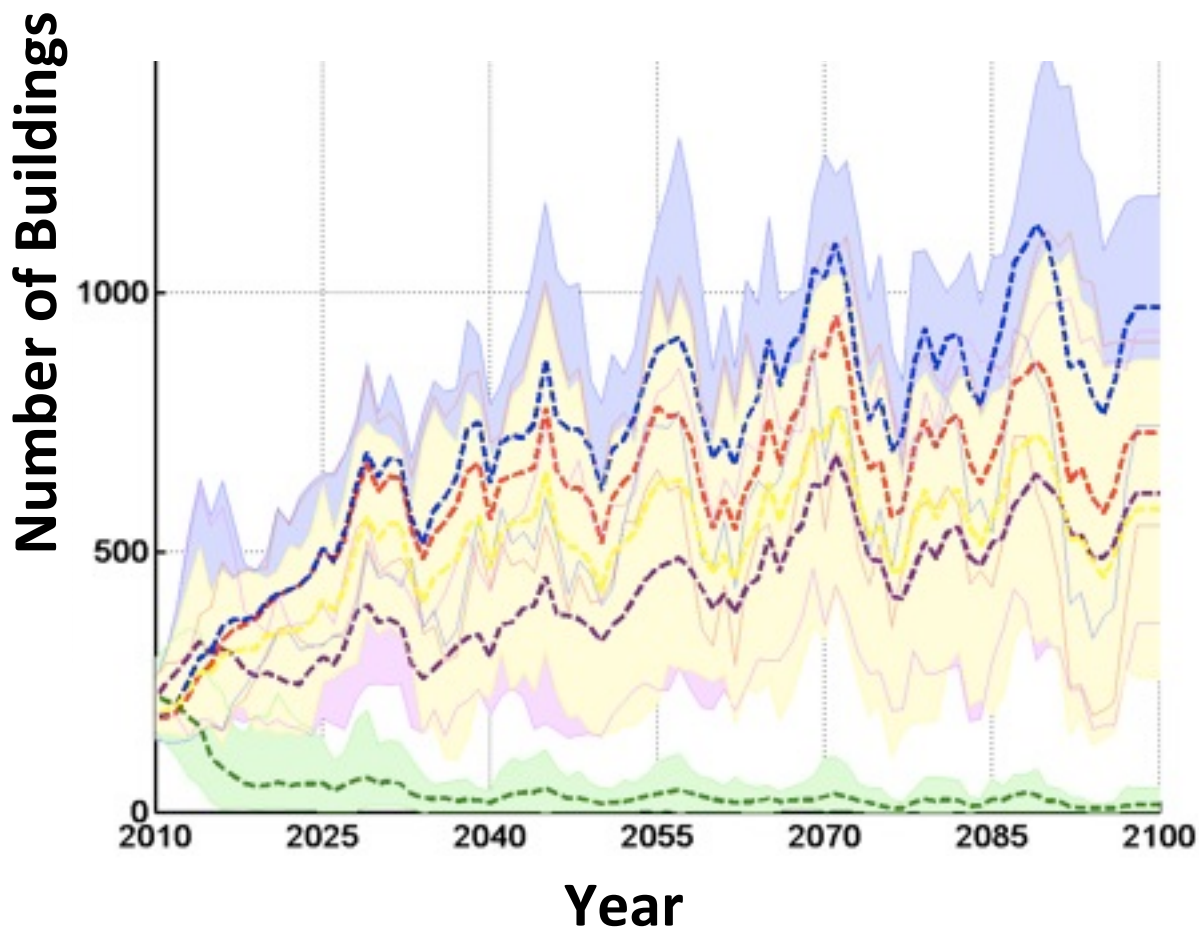
sea level rise, ENSO amplitude, significant wave heights

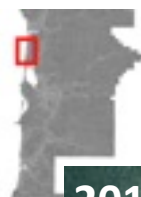


Number of Buildings Impacted by Coastal Hazards

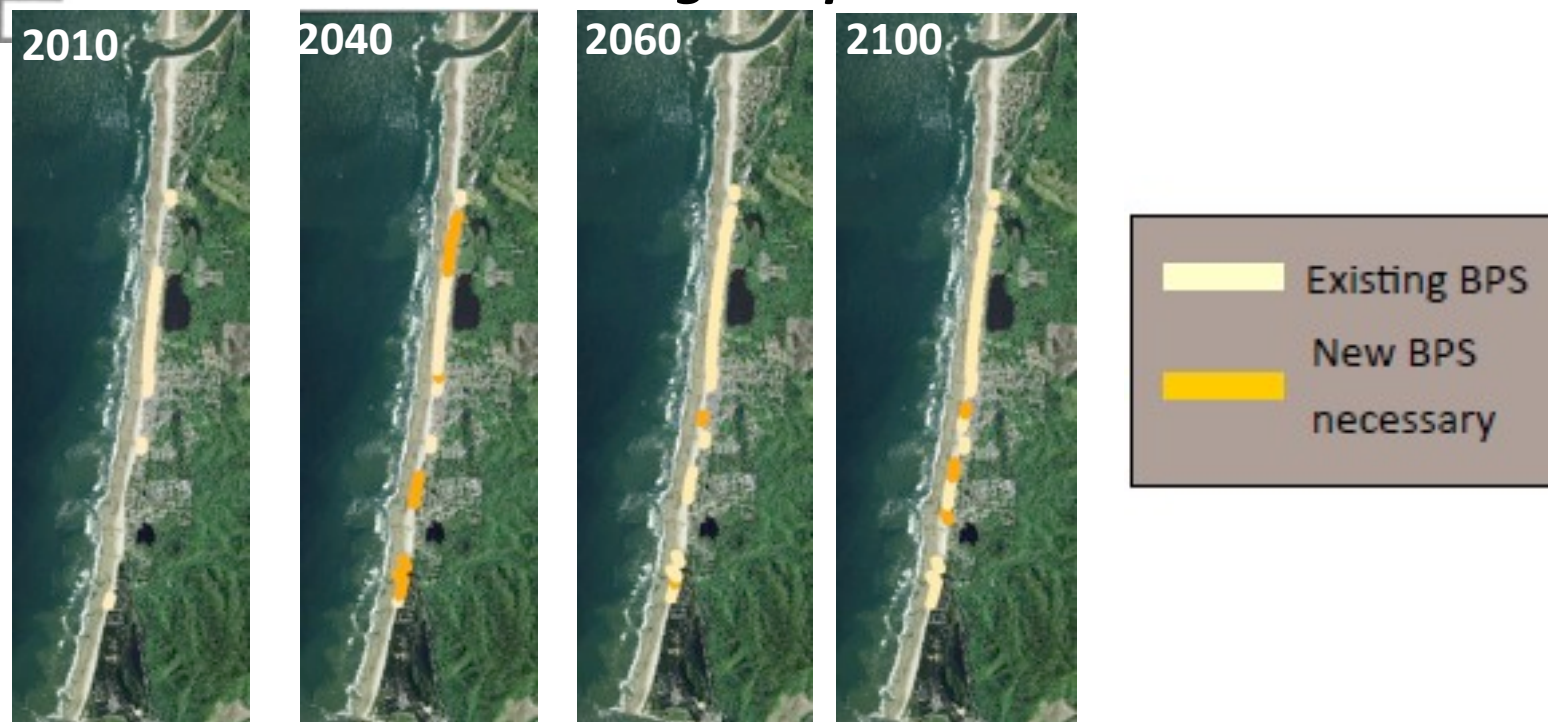
— Status Quo — Hold the Line — Laissez-Faire — ReAlign — Neskowin

Buildings Impacted by Flooding (County Wide)



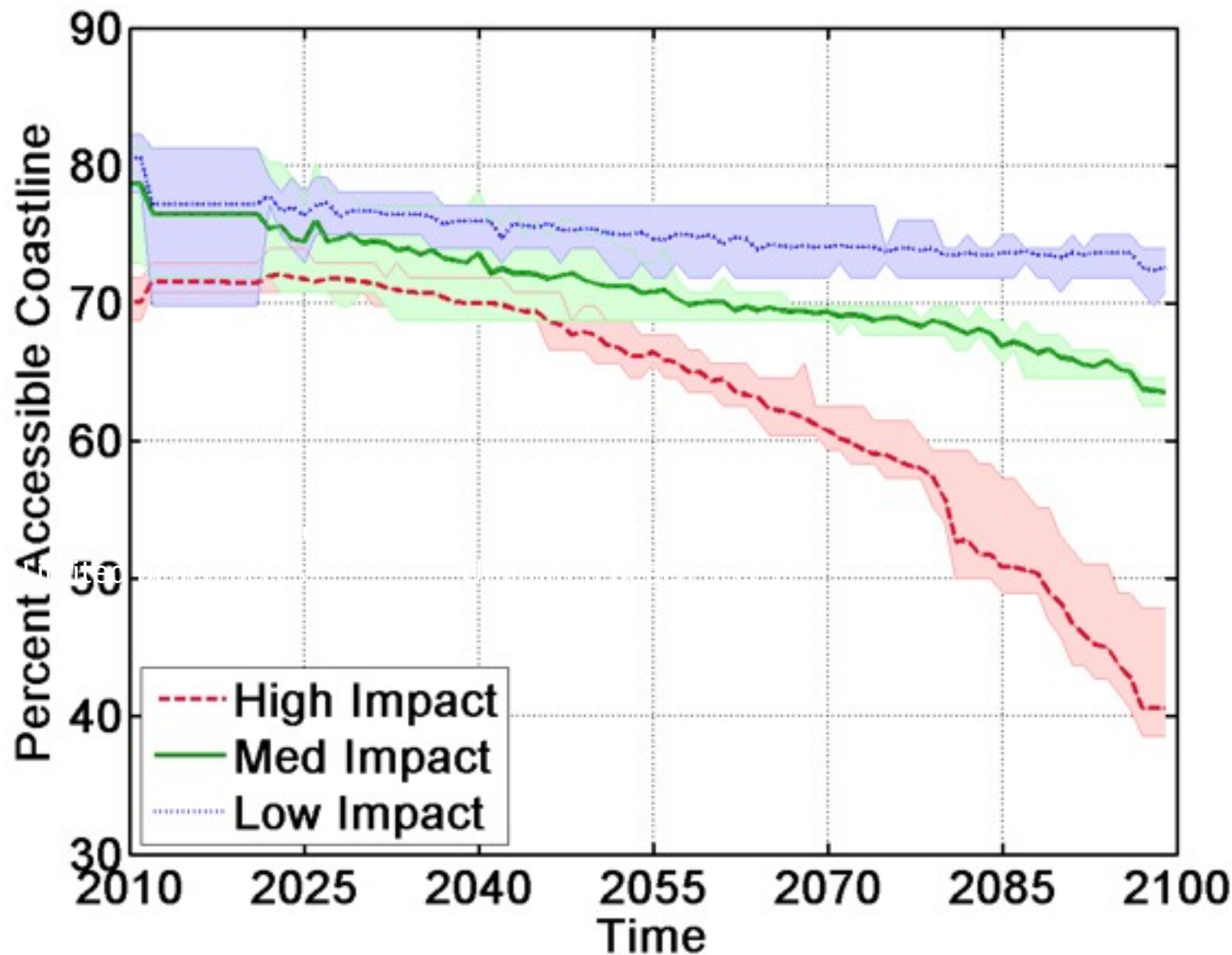


Locations of BPS over time in the Rockaway Beach Littoral Subcell in a *High Impact Climate Scenario*

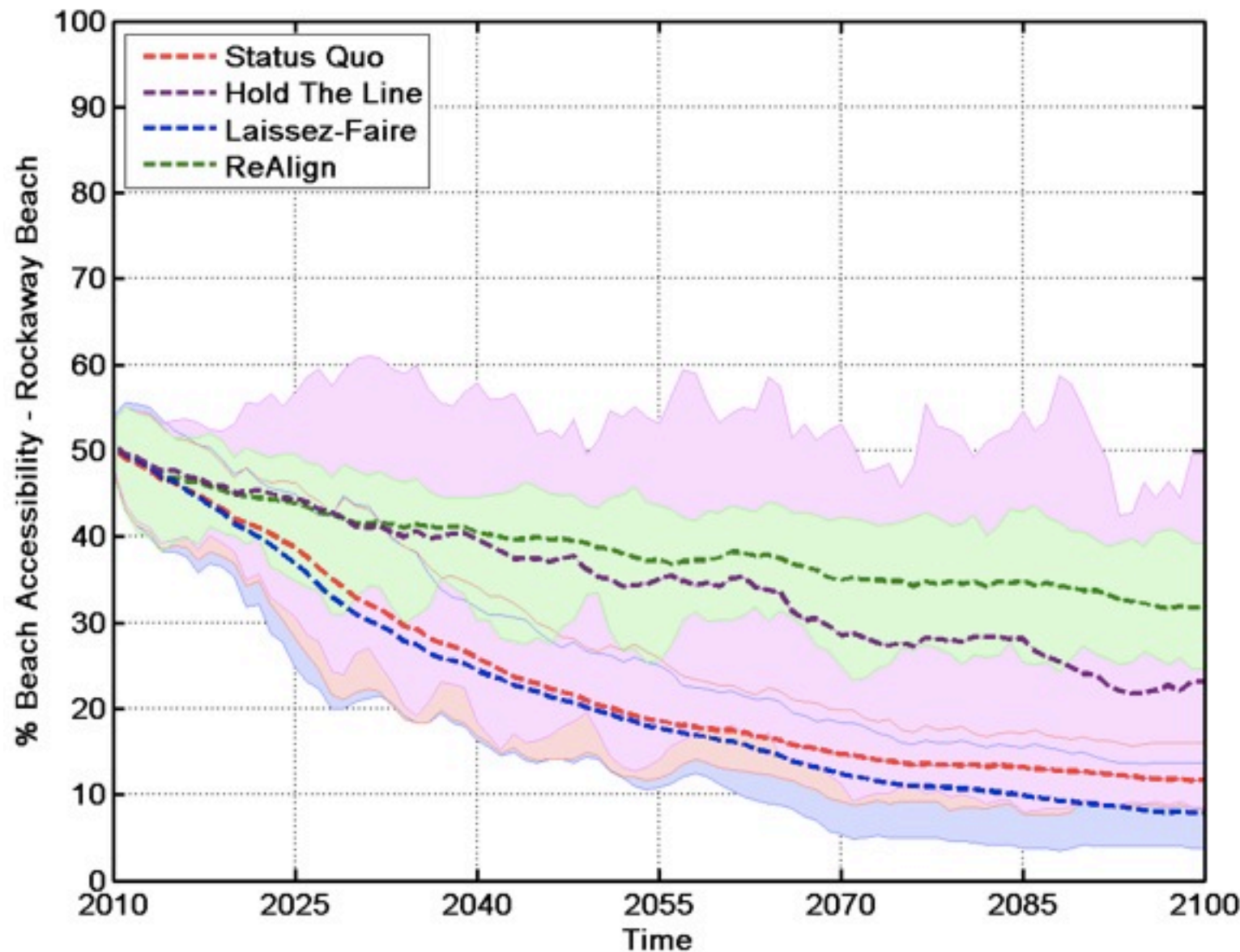


- Under the **Hold The Line** scenario, most BPS constructed between 2010 - 2040, and construction tails off between 2040 and 2060.
- Over 60% of the Rockaway Beach littoral subcell coast needs protection by BPS in 2100, in comparison to Tillamook County's overall need of ~10%.

Beach access in Rockaway subcell - climate



Beach access in Rockaway subcell - policy



Project Objective:

Build coastal Knowledge to Action Networks consisting of stakeholders, researchers, and outreach specialists to co-produce knowledge and climate-resilient communities

Stakeholder meetings have included 8 state agencies, 4 county agencies, a mayor, CIRC, and 6 non-governmental organizations

